Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1-52. (Cancelled)

53. (Previously presented) A method for reading out the state of a qubit, comprising:

    grounding the qubit to form a closed circuit;

    providing a galvanic current through the grounded qubit;

    measuring a voltage across the grounded qubit; and

    determining a quantum state of the qubit based on the voltage.

54. (Previously presented) The method of claim 53, wherein the qubit has a first quantum state corresponding to a first critical current of the qubit and a second quantum state corresponding to a second critical current of the qubit.

55. (Previously presented) The method of claim 53, wherein the qubit is a phase qubit.

56. (Previously presented) The method of claim 53, wherein the grounding comprises closing a switch that couples the qubit to a ground.

57. (Previously presented) The method of claim 53, wherein the providing comprises enabling said galvanic current with a current amplitude that is between (i) a current amplitude of a first critical current corresponding to a first quantum state of the qubit and (ii) a current amplitude of a second critical current corresponding to a second quantum state of the qubit, wherein the current amplitude of the first critical current is smaller than the current amplitude of the second critical current.

58. (Previously presented) The method of claim 53, wherein the determining comprises:

    identifying the quantum state of the qubit as being exclusively in a first quantum state when the voltage is a first value, and

identifying the quantum state of the qubit as being exclusively in a second quantum state when the voltage is high.

59. (Previously presented) The method of claim 53, wherein the determining comprises:

identifying the quantum state of the qubit as being exclusively in a first quantum state when a time-correlated voltage pulse is measured, and

identifying the quantum state of the qubit as being exclusively in a second quantum state when no time-correlated voltage pulse is measured.

60. (Previously presented) A method of initializing a qubit, comprising:

grounding the qubit to form a closed circuit; and

applying a current in a selected direction across the qubit.

61. (Previously presented) The method of claim 60, wherein the qubit has a first quantum state corresponding to a first critical current of the qubit and a second quantum state corresponding to a second critical current of the qubit.

62. (Previously presented) The method of claim 60, wherein the qubit is a phase qubit.

63. (Previously presented) The method of claim 60, wherein the applying comprises:

supplying the current for an amount of time sufficient for the qubit to relax into a selected quantum state.

64. (Previously presented) The method of claim 60, wherein the applying comprises:

supplying the current, and

ramping the current to zero so that the state of the qubit relaxes into a selected state.

65. (Previously presented) The method of claim 60, wherein the grounding comprises:

coupling the qubit to ground through a switch.

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